described above. FIG. **6** is a diagram for visualizing a geometry of the first and second main surfaces **4** and **6** as shown in FIGS. **1** to **5**. As shown in FIG. **6**, the first and second main surfaces **4** and **6** correspond to profiles of axial segments, or portions, of cylinders defining the first and second axes X_4 and X_6, respectively. As shown, the axial segments have elliptical bases. In particular, the first and second cross sections S_4 and S_6 of the first and second main surfaces **4** and **6** have elliptic shapes centered on the first axis X_4 and second axis X_6, respectively. Thus, the geometric definition referenced above for the first and second main surfaces **4** and **6** is again shown here in a more schematic form.

FIGS. **7**, **8** and **9** are diagrams similar to the one in FIG. **6** showing geometric variants of the first and second main surfaces **4** and **6** of the implant **1**. In FIG. **7**, first and second main surfaces **104** and **106**, also described as metacarpal and trapezium joint surfaces, respectively, are represented, each of which correspond to a profile of an axial segment of a cylinder that is centered on first and second axes X_{104} and X_{106}, respectively, and of which the first and second cross sections S_{104} and S_{106}, respectively, are circular and centered on the aforementioned axes. In other words, in some embodiments, the first and second main surfaces **4** and **6** and the first and second main surfaces **104** and **106** differ only in terms of the geometric shape of their cross section, namely elliptical for the first and second main surfaces **4** and **6** and circular for the first and second main surfaces **104** and **106**.

Similarly, in FIG. **8**, first and second main surfaces **204** and **206**, respectively, are represented, each of which corresponds to a profile of an axial segment of a cone that is centered on first and second axes X_{204} and X_{206}, respectively, and of which the first and second cross sections S_{204} and S_{206}, respectively, are circular. In yet another variant not depicted, the aforementioned first and second cross sections S_{204} and S_{206} are elliptic, rather than circular.

Likewise, in FIG. **9**, first and second main surfaces **304** and **306**, respectively, are represented, each of which corresponds to a profile of an axial segment of a torus that is associated with circular, central, first and second axes X_{304} and X_{306}, respectively, and of which the first and second cross sections S_{304} and S_{306}, respectively, that is to say the cross section in a plane perpendicular to the applicable axis, is circular and centered on the axes X_{304} and X_{306}, respectively. In other variants not depicted, the first and second cross sections S_{304} and S_{306} of the aforementioned torus is made elliptical. Similarly, and once again in a variant not depicted, the circular cross section or the elliptical cross section of the torus, instead of being constant along the first and second axes X_{304} and X_{306}, respectively, optionally increases or decreases along the first and second axes X_{304} and X_{306}.

In still other embodiments, the curved geometry of the first and second cross sections S_{104}, S_{106}, S_{204}, S_{206}, S_{304} and S_{306} are continuously circular or elliptic or, by contrast, have substantial variations of curvature along their peripheries, for example. In particular, as has been mentioned above for the elliptic geometry of the first and second cross sections S_4 and S_6, the circular or elliptical geometry of the first and second cross sections S_{104}, S_{106}, S_{204}, S_{206}, S_{304} and/or S_{306} optionally have smaller curvatures in the central regions of the corresponding first and second main surfaces **104**, **106**, **204**, **206**, **304**, and **306** and/or have a greater curvature in the peripheral regions of the first and second main surfaces **104**, **106**, **204**, **206**, **304**, and **306** in relation to a remainder of the cross sections.

FIGS. **6** to **9** thus illustrate various design geometries of the metacarpal and trapezium joint surfaces, or first and second main surfaces of the implant **1**, according to some various embodiments. Depending upon the application, the various design geometries provide desirable articular mobility simulating that of the natural trapeziometacarpal joint, once the body **2** is implanted, given that the two opposite first and second main surfaces **4** and **6**, **104** and **106**, **204** and **206**, **304** and **306** of the implant **1** are arranged orthogonal to each other. In other words, the opposite first and second main surfaces **4** and **6**, **104** and **106**, **204** and **206**, **304** and **306** of the implant **1** are arranged in such a way that their central, first and second axes X_4 and X_6, X_{104} and X_{106}, X_{204} and X_{206}, X_{304} and X_{306} extend substantially perpendicular to one other. In embodiments with surfaces having corresponding curved axes, such as the curved, first and second axes X_{304} and X_{306}, the feature of perpendicularity between the particular set of opposing first and second main surfaces is exhibited via projection of the axes in the median plane π of the body **2** of the implant **1**, where the respective central regions of the first and second main surfaces **304** and **306** are arranged on either side of the plane π (as is also the case with the projections on the plane π of the rectilinear, first and second axes X_4 and X_6, X_{104} and X_{106}, X_{204} and X_{206}, which are also perpendicular to each other).

Various modifications and additions can be made to the exemplary embodiments discussed without departing from the scope of the present invention. For example, although various embodiments have been described with similar, angularly offset shapes for the various first and second main surfaces, it is also contemplated that the design geometry of the first main surface is the same as, with strictly identical or different dimensioning, or different than, the design geometry chosen for the second main surface of the implant. Additionally, while the embodiments described above refer to particular features, the scope of this invention also includes embodiments having different combinations of features and embodiments that do not include all of the above described features.

The following is claimed:

1. A trapeziometacarpal joint implant, the implant comprising a body defining:

a median plane, a metacarpal joint surface and a trapezium joint surface, the metacarpal joint surface having a first central region extending from a center of the trapeziometacarpal joint implant toward a periphery of the trapeziometacarpal joint implant and the trapezium joint surface having a second central region extending from the center of the trapeziometacarpal joint implant toward the periphery of the trapeziometacarpal joint implant, the first central region being situated on an opposite side of the median plane from the second central region, the first and second central regions corresponding to profiles of a first axial segment and a second axial segment, respectively, the first and second axial segments each being one of a cylinder, a cone and a torus and being centered on a first axis and a second axis, respectively, the first and second axes, as projected on the median plane, being perpendicular to each other;

wherein the metacarpal joint surface further defines a first peripheral region adjacent the first central region and the first axial segment has a first cross section that has a smaller radius of curvature in the first central region of the metacarpal joint surface than in the first peripheral region of the metacarpal joint surface.

2. The implant of claim **1**, wherein at least one of the first and second axial segments has a cross section that is curved inward along an entire periphery thereof.

3. The implant of claim **2**, wherein at least one of the first and second axial segments has an elliptic cross section.